GUPALO, I.P.

Should there be gas exhaust systems over anodes in aluminum electrolyzers? TSvet. met. 31 no.4:53-57 Ap '58. (MIRA 11:5)

1. Vsesoyuznyy alyuminiyevo-magniyevyy institut.
(Aluminum--Electrometallurgy)
(Electrolysis)

Country : USSR
Category : Cultivated Plants. Cereals. Leguminous Plants. Tropical Cereals. M

Abs Jour : RZhBiol., No 6, 1959, No 24846

Author : Gupalo, M.
Inst : -
Title : Agricultural Engineering of the Growing of Large Corn Crops.
Orig Pub : Byul. sil's'kogospod. inform. Kiyvs'k. obl., 1958, vyp. 5, 16-18

Abstract : No abstract.

Card : 1/1

PLIT, I.G. [Plit, I.H.], kand. tekhn. nauk; GUPALO, M.T. [Hupalo, M.T.]

Adsorption of sulfur dioxide from water by activated carbons.
Khim. prom. [Ukr.] no.3:39-41 Jl-S '63. (MIRA 17:8)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut.

GUPALO, P. I.

"Stage Variability of Morphological Indexes in the Individual Development of Agricultural Plants," Sub. 11 Mar 47, Inst of Physiology of Plants imeni K. A. Timiryazev, Acad Sci USSR.

Dissertations presented for degrees in science and engineering in Moscow in 1947.

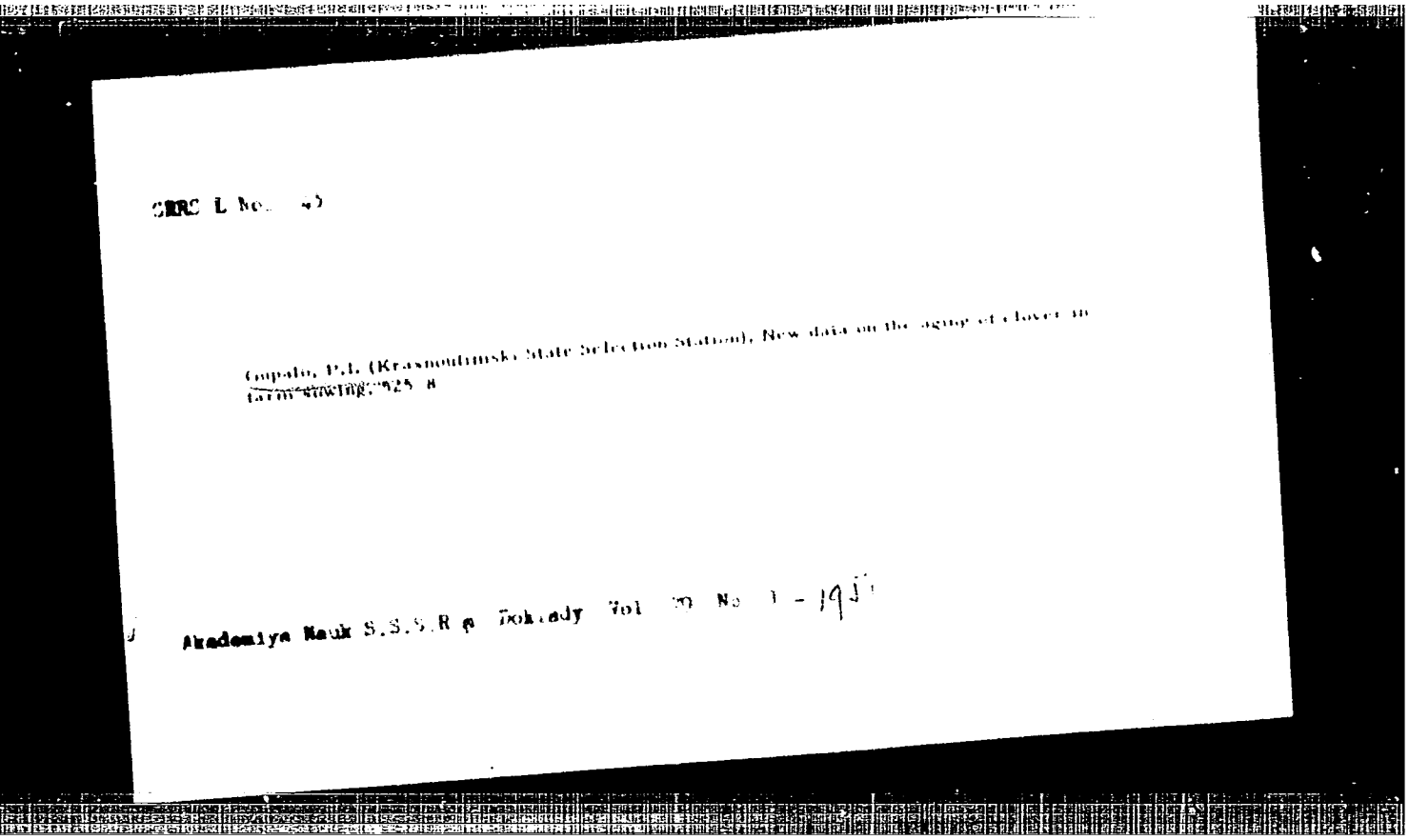
SO: Sum.No.457, 18 Apr 55

GUPALO, P. I.

21594 GUPALO, P. I. Ovodnennost' list'yev v svyazi s dinamikoy ontogeneticheskogo Razvitiya rastemy. Doklady Akad. Nauk SSSR, Novaya seriya, t. LXVII, No. 2, 1949, s. 389-92. — Bibliogr: 18 Nazv

SO: Letopis' Zhurnal'nykh Statey, No. 29, Moskva, 1949

"The Water Content of Leaves in Connection with the Dynamics of Ontogenetic Development in Plants"



CIRC L No. [illegible]

Gupalo, P.L. (Krasnoufimsk State Selection Station). New data on the aging of clover in farm sowings. 925 8

Akademiya Nauk S.S.S.R. Doklady Vol [illegible] No [illegible] - 1951

1. MOKHNATKIN, I. P., ZUPALO, [illegible] I., SAVACHENKOV, D. M.

2. USSR (600)

4. Clover

7. Yield of seed from singlecut clover on second year plots. Sov. Agron. 10, no. 12, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

[illegible], T. T.

Growth (Plants)

Use and development of N. P. Krenke's seientific legacy. Sel. i sem. 19 no. 9, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. UNCLASSIFIED.

GUPALO, P.I.; OPARIN, A.I., akademik.

Physiological characteristics of the morphobiotypes of red clover. Dokl.AN SSSR 91 no.4:965-968 Ag '53. (MLRA 6:8)

1. Akademiya nauk SSSR (for Oparin). 2. Krasnoufimskaya gosudarstvennaya selektsionnaya stantsiya (for Gupalo).
(Clover)

GUPALO, P.I.

Observations on the discussion of plant hormones. Bot.zhur.[Ukr.] 11 no.1:97-100 '54. (MLRA 8:7)

1. Zhitomirs'kiy sils'kogospodars'kiy institut.
(Hormones (Plants))

GUPALO, P.I.

Further developments in the theory of plant ontogenesis. Usp. sovr. giol. 38 no.1:111-121 Jl-Ag '54. (MLRA 7:10)
(BOTANY--EMBRYOLOGY)

GUPALO, P. I.

USSR/Biology - Plant physiology

Card 1/1 Pub. 22 - 43/49

Authors : Gupalo, P. I., and Litvak, A. I.

Title : Importance of roots for the growth of potato shoots during the tuber germination period

Periodical : Dok. AN SSSR 102/1, 173-175, May 1, 1955

Abstract : Scientific data are presented on the importance of roots for the growth of potato shoots during the tuber germination period. Nine USSR references (1948-1954). Tables; illustration.

Institution : The Zhitomir Agricult. Inst.

Presented by : Academician A. L. Kursanov, February 10, 1955

GUPALO, P.I., kandidat biologicheskikh nauk; OKONENKA, A.S., redaktor

[Innovations in the control of plant life] Nove v keruvanii zhyttiam roslyn, Kyiv, 1956. 35 p. (Tovarystvo dlia poshyrennia politychnykh i naukovykh znan' Ukrains'koi RSR. Ser. 3,no.8) (MLRA 10-1)
(Plant propagation)

USSR/Plant Physiology. Growth and Development

Abs Jour : Ref Zhur - Biol., No 19, 1958, No 86663

Author : Cupalo P.I.
Inst : Zhitomir Agricultural Institute
Title : On the Interrelationship of the Root System and the Above-Ground Organs in the Course of the Growth and Development of Plants

Orig Pub : Nauchn. Tr. Zhitomirsk. S.-Kh. In-t, 4, 163-172, 1957

Abstract : When excised crowns of potato tubers are placed in distilled water, the growth increased somewhat but did not turn into a shoot. If, however, roots form at the base of the crown, there grows a normal shoot with leaves. This confirms the idea first enunciated by D.A. Sabinin, that the role of roots is not merely reduced to supplying water and nutrient elements, because they also are the sites of complex organic synthesis of the substances necessary for the growth of the shoot. In suckered tomatoes there is at first an intensification in growth processes, respiration, and hydration of

Card : 1/2

Country : USSR I
Category: Plant Physiology. General Problems.

Abs Jour: RZhBiol., No 14, 1958, No 62934

Author : Gupalo, P.I.
Inst : Moscow Society of Natural Researchers.
Title : The Problem of Ontogenetic Aging and Rejuvenation of Plants and its Importance in Plant Cultivation.

Orig Pub: Byul. Mosk. o-va ispyt. prirody. Otd biol., 1957, 62, No 5, 77-91.

Abstract: The author arrives at the following conclusion on the basis of numerous data supplied by scientific literature: Lysenko's ecologo-physiological stages are dogmatically limited by vernalization and the light stage, and do not encompass

Card : 1/3

Country : USSR I
Category: Plant Physiology. General Problems.

Abs Jour: RZhBiol., No 14, 1958, No 62934

all the qualitative changes in the organism pertaining to aging and rejuvenation processes. The problem of aging and rejuvenation fruitfully studied by Molisch, Child, Krenke, Shitt, and Rabotnov is of great practical importance in fruit cultivation (regeneration of organs after cutting of twigs, and as a result of plowing areas which had been planted in strips). It is also important in clover seed growing, in the solution of the potato degeneration problem, and in connection with perennial wheat aging. Aging is related to the lowering of activity of physio-

Card : 2/3

GUPALO, P.I.

System of concepts (terminology) in plant ontogeny. Fiziol. rast. 6 no.5:604-609 S-O '59. (MIRA 13:2)

1.Department of Plant Physiology, Zhitomir Agricultural Institute.
(Ontogeny (Botany))

17(4), 30(1)

SOV/20-126-4-57/62

AUTHOR: Gupalo, P. I.

TITLE: Effect of Different Methods of Pre-sowing Germination of Tubers on the Course of Ontogenesis and on the Crop of Potatoes (Vliyaniye razlichnykh sposobov predposadochnogo prorashchivaniya klubney na khod ontogeneza i urozhay kartofelya)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 4, pp 894 - 897 (USSR)

ABSTRACT: It is important to separate out and investigate the effect of individual factors exerting the influence of pre-sowing germination mentioned in the title. This could guarantee the joint action of the factors favorable to the pre-sowing germination at minimum costs, eliminating the unfavorable factors. For this purpose in 1957 the author made an experiment with the "Polesskiy ranniy" kind according to the following scheme: 1) Control - storage of the tubers in the cellar until planting; 2) pre-sowing germination in light for 31 days (Fig 2); 3) the same as under 2) but in moist sawdust for 10 days so that roots were generated; 4) pre-sowing germination in the dark without generation of roots. In 1958, the experiment was repeated with

Card 1/3

additional variants 5) and 6). Now, a second kind was used at the same time ("Priyekul'skiy rannIy"). The results of the two years were analogous. Tables 1 and 2 bring the phenological data and the crop records. The aspect of the tubers before laying is shown in figure 1. Table 3 illustrates the ratio between the weight of tubers and plants. Table 4 shows the effect of autumnal greening (ozeleneniye) on the crop (Refs 4,9-12). The author is convinced that for obtaining early potato crops a combination of pre-sowing germination in light, and additional pre-sowing germination in moist medium, is promising good results. The pre-sowing germination in spring can be replaced, in a certain degree, by the autumnal greening. Withering of tubers by long pre-sowing germination in spring should be avoided. Marta Khudoliy, a famous potato grower, covers the tubers in the field with moist straw. There are 2 figures, 4 tables, and 12 references, 10 of which are Soviet.

Effect of Different Methods on Pre-sowing Germination of Tubers on the Course of Ontogenesis and on the Crop of Potatoes SOV/2o-126-4-57/62

ASSOCIATION: Zhitomirskiy sel'skokhozyaystvennyy institut (Zhitomir Agricultural Institute)

PRESENTED: February 14, 1959, by A. L. Kursanov, Academician

SUBMITTED: February 13, 1959

Card 3/3

GUPALO, P.I.

Specific role of roots in the growth of the aerial stem system.
Fiziol.rast. 7 no.1:20-26 '60. (MIRA 13:5)

1. Zhitomir Agricultural Institute.
(Roots(Botany))

GUPALO, P.I. [Hupalo, P.I.]

Persistently develop the theoretical principles of controlling plant ontogenesis. Ukr.bot.zhur. 17 no.2:25-28 '60.
(MIRA 13:11)

1. Zhitomirskiy sel'skokhozyaystvennyy institut, kafedra fiziologii rasteniy.
(Plant propagation)

GUPALO, P.I. [Hupalo, P.I.]

Physiological principles underlying the acceleration of development to obtain an early crop of potato tubers. Ukr.bot.zhur. 18 no.4:13-21 '61. (MIRA 14:8)

1. Zhitomirskiy sel'skokhozyaystvennyy institut, kafedra fiziologii i biokhimii rasteniy.
(Potatoes)

GUPALO, P.I.; ROMANCHUK, P.S.

Specific role of roots in the above-ground growth of plants. Dokl. AN SSSR 147 no.2:493-495 N '62. (MIRA 15:11)

1. Zhitomirskiy sel'skokhozyaystvennyy institut. Predstavleno akademikom A.L. Kursanovym.
(Botany --Physiology) (Roots--(Botany))

GUPALO, P.I.[Hupalo, P.I.]; POLISHCHUK, V.D.; SHLOSS, Ye.S.[Shloss, E.S.]

Prolonged heating of tubers at high temperature as a factor of the degeneration of potatoes. Ukr. bot. zhur. 20 no.2:28-34 '63. (MIRA 16:6)

1. Zhitomirskiy sel'skokhozyaystvennyy institut.
(Plants, Effect of temperature on)
(Potatoes—Diseases and pests)

GUPALO, P.I.

Significance of the age-related changes in plants and their management in plant growing. Biul. MOIP. Otd. biol. 70 no.3: 87-94 My-Je '65. (MIRA 18:10)

GUPALO, P.Ya.; PINSKER, V.L.

New hemp carding machine for the manufacture of rope. Tekst. prom. 19 no.6:71-72 Je '59. (MIRA 12:9)
(Hemp) (Carding machines)

GUPALO, V.I.

GUPALO, V.I., inzh.-mekhanik

Non-return valve of new construction. Neftianik 1 no.6:30 Je '56.
(MIRA 10:12)

1. Odesskiy kreking-zavod.

(Valves)

GUPALO, Ye.Ye.; LEVINSON, L.B.; SAKHAROV, D.A.; SOKOLOVA, G.P.

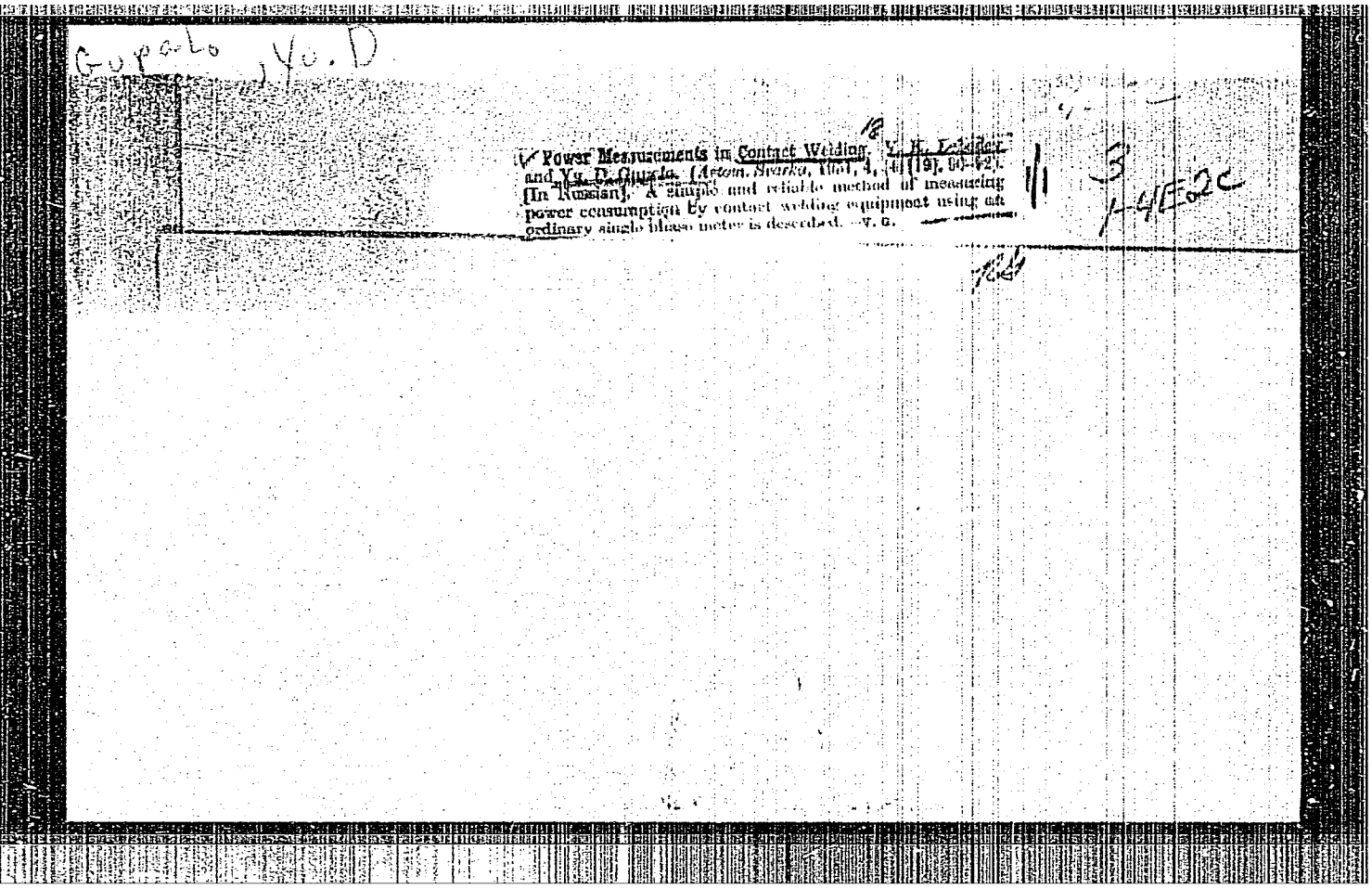
Cytology of Marthner's nerve cells in larvae of the crested newt.
Dokl. AN SSSR 141 no.6:1469-1472 D '61. (MIRA 14:12)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
Predstavleno akademikom Ye.N.Pavlovskim.
(Nervous system--Amphibia) (Medulla oblongata) (Histochemistry)

GUPALO, Ye.Ye. (Moskva)

State of the activity of alkaline and acid phosphatases in chronic hepatitis and cirrhosis of the liver. Arkh. pat. 27 no.10:66-70 '65. (MIRA 18:10)

1. Laboratoriya patologicheskoy anatomii (zav. - prof. A.M.Vikhert) Instituta terapii (direktor - deystvitel'nyy chlen AMN SSSR prof. A.L.Myasnikov).



Gupalo, Yu. D.

Power Measurements in Contact Welding, V. K. Lebedev and Yu. D. Gupalo. (Avtom. Svarka, Vol. 4, [19], 60-62). [In Russian]. A simple and reliable method of measuring power consumption by contact welding equipment using an ordinary single phase meter is described. —V. G.

AID P - 5253

Subject : USSR/Engineering

Card 1/1 Pub. 11 - 4/15

Authors : Paton, B. Ye., O. V. Popovskiy and Yu. D. Gupalo (Electrowelding Institute im. Ye. O. Paton)

Title : Automatic voltage regulator in resistance slag welding

Periodical : Avtom. svar., 4, 50-66, Ap 1956

Abstract : The authors present their research on the automatic regulation of voltage in resistance slag welding, and describe the design of an automatic regulator used in one, two and three-phase circuits. This regulator may be used at various voltages. It could be used also in resistance butt welding. Eight formulae, 8 oscillograms, 6 drawings, 1 graph and photo. Two Russian references (1955).

Institution : As above

Submitted : No date

Subject : USSR/Engineering AID P - 5254

Card 1/1 Pub. 11 - 5/15

Authors : Gupalo, Yu. D., B. A. Movchan, and P. M. Shirokovskiy (Electrowelding Institute im. Paton)

Title : Use of radioactive isotopes to control the level of metal melt in the resistance slag welding vat.

Periodical : Avtom. svar., 4, 67-69, Ap 1956

Abstract : The authors describe the utilization of radioactive isotopes for control of level of melting metal in the vat of resistance slag welding. A special automatic regulator was designed and tested by the Electrowelding Institute im. Paton. Two drawings; 3 Russian references (1953-55).

Institution : As above

Submitted : No date

GUPALO, Yu.D.

Automatic control of the metal bath level in automatic welding under flux. Avtom. svar. 10 no.5:77-85 S-O '57. (MIRA 10:12)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O. Patona AN USSR.
(Electric welding) (Liquid level indicators)

GUPALO, Yu. D.: Master Tech Sci (diss) -- "Automatic regulation of the processes of electro-slag welding". Kiev, 1958. 16 pp (Acad Sci Ukr SSR, Order of Labor Red Banner Inst of Electric Welding im Acad Ye. O. Paton), 150 copies (KL, No 6, 1959, 132)

AUTHOR: Gupalo, Yu.P. SOV-125-58-8-3/16

TITLE: Power Sources for Electric Slag Welding (Ob istochnikakh pitaniya dlya elektroshlakovoy svarki)

PERIODICAL: Avtomaticheskaya svarka, 1958, Nr 8, pp 19-26 (USSR)

ABSTRACT: The effect of the steepness of the external characteristics of power sources on the stability of the process and of the fusing of the welded work edges is investigated. The following conclusions are made: Fluctuations of the network voltage and changes in the speed of electrode feed have a reduced effect on the fusion of edges if the power source has rigid external characteristics. Transformers with such characteristics are smaller in size and in weight, are cheap and have a high power factor and efficiency. The oscillating nature of transition processes does not prevent the use of such power sources. There are 5 graphs, 1 oscillogram and 5 Soviet references.

ASSOCIATION: Institut elektrosvarki imeni Ye.O. Patona, AN USSR (Institute of Electric Welding imeni Ye.O. Paton AS UkrSSR)

SUBMITTED: May 24, 1958

1. Welding--Equipment

Card 1/1

18(2,3,5) SOV/125-59-9-9-/16

AUTHOR: Gupalo, Yu. D., Candidate of Technical Sciences, Rabinovich, V.I., Bel'for, M.G., Rozenberg, O.O., and Khrundzhe, V.M., Engineers

TITLE: Electric Welding under Slag of Circumferential Welds of Thickwalled Tanks

PERIODICAL: Avtomaticheskaya svarka, 1959, Nr 9, pp 64-73 (USSR)

ABSTRACT: The Barnaul'skiy Boiler-Works in co-operation with the Institute of Electric Welding imeni Ye.O. Paton has, in 1953-1958, worked out and introduced the method of electric welding of longitudinal and circumferential welds for boilers and hydraulic press drums, made of steel 22 k and having a wall thickness of 4 to 20 cm. In Fig 1, a cylindrical tank of 1000-2000 liters capacity with walls 10-15 cm thick, working under pressure of 320 atm. is given. Before the new process was introduced, such tanks were made of forged sheets, or they were all-forged; as a result of this method of manufac-

Card 1/3

Electric Welding under Slag of Circumferential Welds of Thickwalled Tanks

turing, the total losses of metal wasted in machining and forging amounted to 73%, while the process of machining and finishing took 2 to 3 weeks. The new method enables manufacturing of cylindrical tanks out of two parts prepared by hot stamping under pressure of 8000 tons. Welding of circumferential joints is performed by two electrodes at the electrode feed speed of 100 m/hour. At the beginning of the process, the tension of the arcs applied is 40 to 42 volts; later on, when the process becomes stabilized, the tension is raised up to 45 volts, and the electrode feed speed up to 250 m/hour. The slag puddle is 45-55 mm deep. In Table 1, figures showing the conditions of welding are given. In compliance with the regulations of the Gosgortekhnadzor and of the technical conditions of BKZ, the quality of welds undergoes a control which is performed by means of ultra-sonic defectoscopes that permit disclosing of such faults which could not be detected

Electric Welding under Slag of Circumferential Welds of Thickwalled Tanks

by using other methods of checking, and which shorten the process of γ -rays examination. The examination is, as a rule, performed on 25% of circumferential welds 15 cm thick is 90 minutes. Table 2 gives the average figures on testing of welds having δ = 155 mm. Welding was performed by S$_v$ -10G2 electrode wire with application of powder flux AN-8M. There are 2 tables, 6 diagrams, 1 photograph and 7 Soviet references.

ASSOCIATION: 1) Barnaul'skiy kotel'nyy zavod (Barnaul Boiler Works); (Rabinovich) 2) Ordena trudovogo krasnogo znameni institut elektrosvarki imeni Ye.O.Patona AN USSR (Order of the Red Banner of Labor Institute of Electric Welding imeni Ye.O.Paton, AS UkrSSR), (Bel'for, Gupalo, Rozenberg, Khrundzhe)

SUBMITTED: August 21, 1958

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S/179/60/000/006/005/036
E031/E135

AUTHOR: Gupalo, Yu.P. (Moscow)

TITLE: On the Stability of the Laminar Motion of a Fluid Containing a Solid Mixture

PERIODICAL: Izvestiya Akademii nauk SSSR,Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1960, No. 6, pp. 38-46

TEXT: The following assumptions are made: 1) the fluid is incompressible and viscous; 2) molecular diffusion of the particles in the flow can be neglected; 3) interaction between the particles can be ignored; 4) the particles are all spheres with the same radius. An expression for the force exerted by the fluid on the particles is derived and introduced into the equations of motion and continuity. These equations are transformed to non-dimensional form. The stability problem for flow in a vertical slit is stated. The solution of the equations is sought as the sum of a stationary solution and an infinitesimal disturbance. The stationary solution is stated as a one-dimensional flow along a slit with constant mixture concentration.

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S/179/60/000/006/005/036
E031/E135

On the Stability of the Laminar Motion of a Fluid Containing a Solid Mixture

The disturbance is taken as a superposition of small periodic oscillations. The system of equations for the non-dimensional amplitudes can be transformed to an equivalent one for a two-dimensional disturbance and this leads to a fourth order equation. Before determining the line of neutral stability (stability boundary), the method of asymptotic solutions is introduced. A fundamental system of four solutions is found, the first two in the form of series in inverse powers of $\alpha R(1 + \rho_0\gamma/2)$ (ρ_0 is the mean concentration of the suspension, $\gamma = \sigma/(\sigma + 3/2)$, $\sigma = (d_2 - d_1)/d_1$, d_1 is the density of the fluid and d_2 the density of the solid phase, R is the Reynolds number). The second two are in the form $\exp(\int G dy)$, where G involves the square root of the above parameter and y is a coordinate perpendicular to the walls. These asymptotic solutions are applied to the particular case of slow flow in a wide slit. This simplifies the fourth order equation and the asymptotic solutions concerned. Two cases arise, defined respectively by

Card 2/4

S/179/60/000/006/005/036
E031/E135

On the Stability of the Laminar Motion of a Fluid Containing a Solid Mixture

the inequalities

$$0 \leqslant c_1 \leqslant 1 \quad \text{and} \quad a_1 \leqslant c_1 \leqslant 1 + a_1$$

where: $c_1 = c - \frac{(\sigma + 1)\rho_0}{1 + \rho_0\sigma} a$, and $a_1 = \frac{1 - 2\rho_0 - \rho_0^2\sigma}{1 + \rho_0\sigma} a$

(Eq. 4.3). In the first case sufficient conditions for stability are obtained by the method of Synge (Ref.3). The stability boundaries may be found in the usual way. The following conclusion is reached: for slow flow in a wide slit the presence of a solid mixture leads to a later appearance of disturbances of neutral stability, which are propagated with sufficiently small velocity, but in the case of a descending flow the presence of a solid mixture can also lead to the appearance of additional disturbances of neutral stability, whose velocity of propagation is comparable with the scale of the particles and

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S/179/60/000/006/005/036
E031/E135

On the Stability of the Laminar Motion of a Fluid Containing a Solid Mixture

instability can occur for arbitrary small Reynolds numbers.
Acknowledgements are expressed to G.I. Barenblatt for proposing the problem and directing the work.
There are 1 figure and 5 references: 3 Soviet and 2 English.

SUBMITTED: July 6, 1960

Card 4/4

S/032/61/027/001/008/037
B017/B054

5.5500

AUTHORS: Goroshko, V. D. and Gupalo, Yu. P.

TITLE: Radiometric Method of Viscosity Determination

PERIODICAL: Zavodskaya laboratoriya, 1961, Vol. 27, No. 1, pp. 38-40

TEXT: To determine rheological properties of hydro- and aerosuspensions, a method was developed to measure the velocity of descent of a body containing a radioactive isotope. The apparatus is schematically shown in Fig. 1. In the scintillation cell, a monocrystal of sodium iodide is attached to the front side of the photomultiplier. The latter is installed in a lead collimator. At an activity of the descending bodies of 20-50 μC, the gap width of the collimator varies between 2 and 10 mm. The intensity of radiation is calculated by the following formula:

$$I = Cy/(R+x)^2 \qquad (1),$$

where y = gap width, R = distance of the motion line of the tagged substance from the front side of the collimator, x = gap depth, C = proportionality factor. Fig. 2 shows the mode of operation of the

Card 1/2

Radiometric Method of Viscosity Determination S/032/61/027/001/008/037
B017/B054

collimator with the radioactive isotope. Co^{60}, Zn^{65}, and Sn^{113} were used as radioactive isotopes in globules made of plastics. The viscosity of aqueous sand suspensions was determined by the method described; results are given in a table. The values were compared with those obtained by measurements with a rotation viscosimeter. They were found to be in good agreement. The radiometric method of viscosity determination is recommended for determining rheological properties of suspensions. There are 2 figures and 1 table.

ASSOCIATION: Institut goryuchikh iskopayemykh Akademii nauk SSSR (Institute of Mineral Fuels, Academy of Sciences USSR)

ANDRES, U.TS.; GUPALO, Yu.P.

"Ore dressing with use of heavy suspensions" by G.S. Evsiovich. Reviewed by U.TS.Andres, IU.P.Gupalo. Gor. zhur. no.8:79-80 Ag '60. (MIRA 13:8)

1. Institut gornogo dela AN SSSR, Moskva.
(Ore dressing--Equipment and supplies)

ANDRES, U.TS.; GUPALO, Yu.P.

Timely book ("Coal preparation in heavy substances" by M.V.TSiperovich. Reviewed by A.TSAndres, IU.P.Gupalo) Ugol' 35 no.11:64 N '60.
(MIRA 13:12)

1. Institut goryuchikh iskopayemykh AN SSSR.
(Coal preparation) (TSiperovich, M.V.)

ANDRES, U.TS., sotrudnik; GUPALO, Yu.P., sotrudnik

Viscosity of heavy suspensions. Obog. rud 6 no.3:54-55 '61.
(MIRA 14:11)

1. Institut goryuchikh iskopayemkh.
(Ore dressing)

GUPALO, Yu.P.; PETRENKO, I.I.; ROZENBAUM, R.B.; TODES, O.M.

Measuring density pulsations in a fluidized bed. Izv. AN SSSR. Otd. tekh. nauk. Met. i topl. no.4:123-127 Jl-Ag '61. (MIRA 14:8)

(Fluidization—Density)

ANDRES, U.TS.; GUPALO, Yu.P.

U. TS. Andres and IU. P. Gupalo's review of S. G. Evsiovich's book "Heavy media ore dressing." Gor. zhur. no. 6:79 Je '61. (MIRA 14:6)
(Ore dressing--Equipment and supplies)
(Evsiovich, S. G.)

KORSHUNOV, V.I.; Prinimali uchastiye: GUPALO, Yu.P.; ROMANOV, Yu.V.

Effect of the homogeneity of aerial suspensions as dry heavy media in gravity concentration. Izv.Sib.otd.AN SSSR no.1:92-94 '62. (MIRA 15:3)

1. Institut goryuchikh iskopayemykh AN SSSR, Moskva.
(Ore dressing)

GUPALO, Yu.P.; ANDRES, U.TS.

Concerning I.Z.Margolin's book "Preparation of coals and dressing of nonmetallic ores in heavy media." Koks i khim. no.10:63-64 '62.
(MIRA 16:9)

(Coal preparation) (Ore dressing)
(Margolin, I.Z.)

GUPALO, Yu.P.

Some regularities characterizing a pseudoliquefied layer and a constrained fall. Inzh.-fiz.zhur. 5 no.1:96-98 Ja '62. (MIRA 15:3)

1. Institut goryuchikh iskopayemykh, Moskva.
(Mechanics, Analytic) (Suspensions (Chemistry))

GUPALO, Yu.P.

Motion of a body in a fluidized bed. Inzh.-fiz. zhur. 5 no.2:15-18 F '62. (MIRA 15:1)

1. Institut goryuchikh iskopayemykh, Moskva.
(Fluidization) (Radioactive tracers)

GUPALO, Yu.P.; KOROVIN, V.N.

Reclamation of the filler in air suspension coal preparation. Trudy IGI 20:20-45 '60. (MIRA 17:8)

ANDRES, U. ts., kand. na tekhn. nauki; GUPALO, IU. P. [Gupalo, Yu. P.], inzh.

A method for computing free falling of mineral grains into homogeneous liquids, in structureless of structural suspensions. Min delo 18 no.1:37-43 Ja '63.

1. IGD kum AN na SSSR.

L 9379-66 EWT(l)/EWP(m)/EWT(m)/EWA(d)/EWP(t)/FCS(k)/EWP(b)/EWA(l) JD

ACC NR: AP5026926 SOURCE CODE: UR/0373/65/000/005/0011/0013

AUTHORS: Buyevich, Yu. A. (Moscow); Gupalo, Yu. P. (Moscow)

ORG: none

TITLE: Flow around a body covered by a thin film

SOURCE: AN SSSR. Izvestiya. Mekhanika, no. 5, 1965, 11-13

TOPIC TAGS: flow around cylinder, flow around sphere, flow kinetics, fluid mechanics, friction, drag force, thin film, Reynolds number, Euler constant

ABSTRACT: A study was conducted of flow around a sphere or cylinder of radius a', covered by a liquid film of uniform thickness $a - a'$. The flow is that of a fluid whose velocity at an infinite distance from the body is U = constant. The axis of the cylinder is normal to the direction of flow at infinity. Both fluids are considered to be incompressible, and Reynolds number $R = Ua/\nu$ (where ν is the coefficient of kinematic viscosity of the outer fluid) is considered small. Velocity components of the outer flow (v_r, v_θ) and for the flow in the film (v'_r, v'_θ) are, in the case of a spherical body, given by

Card 1/4

$$v_r = (1 + a_2 ar^{-1} + a_4 a^3 r^{-3})\, U \cos\theta$$
$$v_\theta = (-1 - {}^1/_2 a_3 ar^{-1} + {}^1/_2 a_4 a^3 r^{-3})\, U \sin\theta$$
$$v_r' = (a_1' a^{-2} r^2 + a_2' + a_3' ar^{-1} + a_4' a^3 r^{-3})\, U \cos\theta$$
$$v_\theta' = (-2a_1' a^{-2} r^2 - a_3' - {}^1/_2 a_3' ar^{-1} + {}^1/_2 a_4' a^3 r^{-3})\, U \sin\theta,$$

and in the case of a cylinder are given by

$$v_r = [1 + a_2 \ln({}^1/_4 \gamma Rra^{-1}) - a_2 + a_4 a^2 r^{-2}]\, U \cos\theta + (a_0 - 2R^{-1}a_2) ar^{-1} U$$
$$v_\theta = [-1 - a_2 \ln({}^1/_4 \gamma Rra^{-1}) + a_4 a^2 r^{-2}]\, U \sin\theta$$
$$v_r' = [a_1' a^{-2} r^2 + a_2' \ln(a^{-1} r) - {}^1/_2 a_2' + a_3' + a_4' a^2 r^{-2}]\, U \cos\theta$$
$$v_\theta' = [-3a_1' a^{-2} r^2 - a_2' \ln(a^{-1} r) - {}^1/_2 a_2' - a_3' + a_4' a^2 r^{-2}]\, U \sin\theta.$$

In these equations $\gamma = \exp C$, where C is Euler's constant, and the parameters a_i and a_i' are determined from boundary conditions. Resistance force is derived as

$$F = 4\pi a \mu U [1 + {}^1/_2 K(\lambda, \varkappa)]$$

for the sphere, and as

$$F = \frac{8\pi a \mu U}{1 - 2\ln({}^1/_4 \gamma R)} \times \left[1 - \frac{1}{2} \frac{1 - K(\lambda, \varkappa)}{1 - \ln({}^1/_4 \gamma R)}\right]$$

ACC NR: AP5026926

for the cylinder. The derivation is that of Stokes for the sphere, while the cylinder solution is that of G. Lamb (Gidrodinamika. Gostekhizdat, 1947). The equations point out that within the fluid film there occurs an intensive circulating motion, as is exemplified in Fig. 1

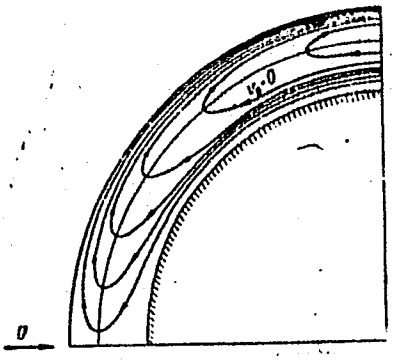

Fig. 1.

for flow around a sphere with $\lambda = 3/4$. Special consideration is given to the fact that the film, while reducing skin friction, also increases the resistance area of the body. Plots were made (see Figs. 2 and 3)

L 9379-66

ACC NR: AP5026926

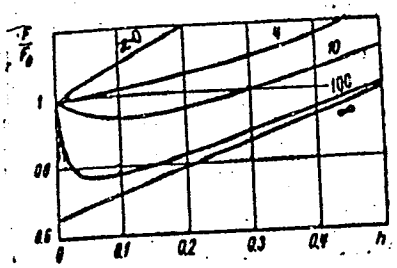

Fig. 2.

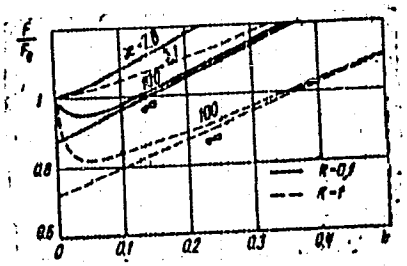

Fig. 3.

of the relationship of the resistance force F of the body covered by a film, and the force F of the uncovered body relative to the parameter $h = (a - a')/a'$. A discussion of the simple case $h \ll 1$ is presented. Orig. art. has: 3 figures and 11 equations.

SUB CODE: 20/ SUBM DATE: 08Jul65/ ORIG REF: 001

Card 4/4

GUPALO, Yu.P.

Contribution to the theory of aerosol filtration. Dokl. AN SSSR 164 no.6:1339-1342 O '65. (MIRA 18:10)

1. Institut problem mekhaniki AN SSSR. Submitted April 9, 1965.

L 25754-66 EWP(j)/EWT(l)/EWT(m)/ETC(m)-6/T IJP(c) RM/DS/WW/RO/JK

ACC NR: AP6016383 SOURCE CODE: UR/0020/65/164/006/1339/1342

AUTHOR: Gupalo, Yu. P. 32 B

ORG: Institute of Problems of Mechanics, AN SSSR (Institut problem mekhaniki AN SSSR)

TITLE: Theory of aerosol filtration

SOURCE: AN SSSR. Doklady, v. 164, no. 6, 1965, 1339-1342

TOPIC TAGS: aerosol, gas filter

ABSTRACT: The theory of diffusion settling of aerosols on the fibers of an aerosol filter is discussed for the case when the distance between the surfaces of neighboring fibers is small in comparison with the fiber diameter, and corresponding expressions are obtained for the average pressure gradient over the thickness of the filter and for the trapping coefficient. This paper was presented by Academician A. N. Frumkin on 9 April 1965. The author thanks V. G. Levich and those who participated in the seminar for the useful discussions. Orig. art. has: 12 formulas and 2 figures. [JPRS]

SUB CODE: 13 / SUBM DATE: 24Mar65 / ORIG REF: 003 / OTH REF: 004

Card 1/1 CC UDC: 541.182.2/3

L 29815-66 EWT(1)/EWP(m) MW

ACC NR: AP6013204 SOURCE CODE: UR/0421/66/000/002/0099/0101

AUTHOR: Buyevich, Yu. A. (Moscow); Gupalo, Yu. P. (Moscow) 46 B

ORG: none

TITLE: The effect of hydrodynamic friction on the stability of the boundary layer in annular two phase flow

SOURCE: AN SSSR. Izvestiya. Mekhanika zhidkosti i gaza, no. 2, 1966, 99-101

TOPIC TAGS: fluid friction, boundary layer theory, fluid flow

ABSTRACT: The article considers the problem of annular flow in a vertical tube, when the gas flow in the central portion of the tube is separated from the walls of the tube by an annular layer of liquid. Friction at the interface can be considered as either a stabilizing or unstabilizing influence on the stability of such a flow regime, with respect to small disturbances of the interface. The thickness of the liquid layer is assumed to be small, which permits the results of the work to be used directly in an investigation of the stability. The mathematical results arrived at in the article are applicable to cases of both laminar and fully developed turbulent movement of a gas; the

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L 29815-66

ACC NR: AP6013204

movement of the liquid forming the layer is assumed to be laminar in both cases. Orig. art. has: 8 formulas and 2 figures.

SUB CODE: 20/ SUBM DATE: 11Sep65/ ORIG REF: 001

Card 2/2

L 32645-66 EWT(1)/EWP(m) WW

ACC NR: AP6010847 SOURCE CODE: UR/0421/66/000/001/0105/0112

AUTHOR: Buyevich, Yu. A. (Moscow); Gupalo, Yu. P. (Moscow)

ORG: none

TITLE: Stability of laminar flow of a liquid layer

SOURCE: AN SSSR. Izvestiya. Mekhanika zhidkosti i gaza, no. 1, 1966, 105-112

TOPIC TAGS: laminar flow, Navier Stokes equation, flow stability equation

ABSTRACT: The problem of a stable flow of a layer of liquid on an inclined plane is studied with the help of Navier-Stokes equations. The problem is cast in dimensionless form and equations for small deviations from the stable configuration are derived. The derived equations are approximation, which is given as

$$s \sim n_1 + T\left(m^2 - \frac{1}{r^2}\right) > 0$$

It follows from this criterion that both transverse and longitudinal excitations have the same effect on the stability of flow. However, the stability criterion is more complicated when second order approximation is used and regions of instability occur. An example of the flow with gravitational force alone is considered and its stability regions are given in graphic form. Orig. art. has: 4 figures, 28 formulas.

SUB CODE: 20/ SUBM DATE: 20Sep65/ ORIG REF: 004/ OTH REF: 004

Card 1/1

GUPALO, Yu. V.; BESH, M.G.

Improving working conditions for medical personnel in stomatological clinics. Gig. i san. 23 no.12:79 D '58. (MIRA 12:1)
(MERCURY--TOXICOLOGY)

GUPALOV, I. G., KOSTYUKOV, A. A., LOZHKIN, L. N., V[illegible]TYUKOV, M. M. and ABRAMOV, G. A.

"Theory of Electrolytic Aluminum Manufacture," Moscow, 1953.

SIMKOVIC, I.; BOLF, J.; SISKA, K.; GUPKA, M.; SMRECHANSKY, V.; SCHNORRER, M.; ZIMA, P.

Apparatus for artificial blood circulation designed in Czechoslovakia. Eksper. khir. 5 no.6:16-22 N-D '60. (MIRA 14:2)
(PERFUSION PUMP (HEART))

SHMKOVITS, I.; SHISHKA, K.; GUPKA, M.; VOL'F, Yu.; SMERCHANSKIY, V.; SHMORRER, M.

Functional parameters of an apparatus made in Czechoslovakia for artificial blood circulation. Eksp.khir.i anest. 6 no.3:13-20 '61. (MIRA 14:10)

(PERFUSION PUMP (HEART))

BUKREYEV, P.I.; GUPPER, N.Z.

Beet unloader and piler designed by the Ukrainian Institute for Designing and Planning in the Sugar Industry. Sakh. prom. 31 no.10:50-51 O '57. (MIRA 11:1)

1. Kalinovskiy remontno-mekhanicheskiy zavod.
(Sugar industry--Equipment and supplies)

GUPTA, A.M., vedecky aspirant hutniho inzenyrstvi

Statistic and metallographic studies of mechanical properties of ferritic nodular cast iron. Slevarenstvi 12 no.8:316-318 Ag '64

1. Chair of Materials, Faculty of Mechanical Engineering, Higher School of Technology, Brno.

GUPTA, A.M., vedecky aspirant

Factors determining mechanical [illegible] nodular cast iron. Slevarenstvi 12 n.9:357-360 S '64.

1. Chair of Material Science, Faculty of Mechanical Engineering Higher School of Technology, Brno.

CZECHOSLOVAKIA / GREAT BRITAIN

HOLLAND, H.C.; GUPTA, B.D.; WELDON, E.; Institute of Psychiatry, London.

"A Note on Rearing and on Environmental Constraint."

Prague, Activitas Nervosa Superior, Vol 8, No 2, June 66, pp 140-144

Abstract [Authors' English summary modified]: Rearing sometimes called the standing up response was investigated in two groups of highly inbred strains of rats. Environmental constraint was effective even when its effect was limited to the first day of testing. The tendency to rearing was the same in males and females. It could not be ascertained whether rearing is an exploratory activity in a novel situation or a behavioral manifestation of a genetically determined central nervous system excitability. 3 Figures, 3 Tables, 6 Western, 3 Czech references. (Manuscript received 16 Nov 65.) Article is in English.

1/1

GUPTA, K. Sen

Studies on insect tissue culture. I. Culture of tissues from the wax moth, Galleria mellonella L. in vitro. Folia biol. 7 no.6: 400-408 '61.

1. Institute of Biology, Czechoslovak Academy of Sciences, Laboratory of Insect Pathology, Prague.

(TISSUE CULTURE) (INSECTS)

BAZANOV, F.M.; VEGMAN, Ye.F.; GUPTA, S.K.

Sintering of the Indian ore from the Rajgark deposit. Izv. vys. ucheb. zav.; chern. met. 8 no.5:17-20 '65.

(MIRA 18:5)

1. Moskovskiy institut stali i splavov.

MINTS, A.Ya., kand.med.nauk, OSTROVSKIY, M.I., zaslyzhennyy vrach USSR, polkovnikmed. sluzhby; GUR, E.K., ordinator

Takayashi's disease (panarteritis of vessels originating in the aorta) Vrach.delo no.9:933-938 S'58 (MIRA 11:10)

1. Klinika nervnykh bolezney (nauchnyy rukovoditel'-deystv. chlen AMN, prof. B.N. Man'kovskiy) Kiyevskogo meditsinskogo instituta i Okruzhnoy voyennyy gospital'.
(ARTERIES--DISEASES)

GUR, E.K.; TSYRKUNOV, L.P.

Tuberous sclerosis. Vrach. delo no.10:117-119 O '61. (MIRA 14:12)

1. Klinika nervnykh bolezney (zav. - deystvitel'nyy chlen AMN SSSR, prof. B.N.Man'kovskiy) i klinika koznykh i venericheskikh bolezney (zav. - dotsent S.N.Bogdanovich) Kiyevskogo meditsinskogo instituta imeni akademika A.A.Bogomol'tsa.
(TUBEROUS SCLEROSIS)

GUR, E.K.

Pathogenesis of facial atrophy. Zhur.nerv.i psikh. 62 no.6:820-824 '62. (MIRA 15:11)

1. Klinika nervnykh bolezney (zav. - prof. B.N.Man'kovskiy) bol'nitsy imeni Oktyarb'skoy revolyutsii, Kiyev.
(ATROPHY) (FACE--DISEASES)

GUR, P., tekhnolog

Individual casting of piston rings for marine internal combustion engines. Mor.flot 21 no.2:30-31 F '61. (MIRA 14:6)

1. Tuapsinskiy sudoremontnyy zavod.
(Piston rings)
(Marine engines)

GUR, P.L.

Casting of piston rings for marine engines. Lit.proizv. no.2:8-9 F '62. (MIRA 15:2)
(Iron founding) (Piston rings)

GUR-KIL'NER, A. B.

24086 GUR-KIL'NER, A. B. Raschet kontsentratsii rastvora, protekayushchego cherez sistemu sosudov v dvukh protivopolozhnykh napravleniyakh. Trudy Leningr. El-TA Kinoinzhenerov, VIP. 2, 1949, S. 99-111.

SO: Letopis, No. 32, 1949.

S/141/60/003/02/015/025
E192/E382

AUTHOR: Gur-Mil'ner, A.B.

TITLE: Construction of the Envelopes of the Resonance Characteristic for a Ladder Filter

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1960, Vol 3, Nr 2, pp 299 - 310 (USSR)

ABSTRACT: The network considered consists of n identical elements connected in series. At each terminal, the network contains an element which differs from the remaining elements (Figure 1). The total number of elements is therefore equal to $n + 2$. The parameter which characterises the behaviour of an element having an index s ($s = 0, 1, 2, 3, \ldots, n + 1$) is denoted by x_s. It is necessary to determine the amplitude of the oscillations at the last element, when a signal of the type $f = \sin \omega t$, where f and ω are constants, is applied to the input element. The relationship between the elements can be mathematically expressed by:

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VC

S/141/60/003/02/015/025
E192/E382

Construction of the Envelopes of the Resonance Characteristic for a Ladder Filter

$$a_o x_o - a_1 x_1 = f \sin \omega t \ ,$$

$$-bx_{s-1} + ax_s - bx_{s+1} = 0 \quad (s = 1, 2, \ldots, n) \qquad (1.1)$$

$$-a_n x_n + a_{n+1} x_{n+1} = 0$$

where a_o, a_1, a_n, a_{n+1}, a and b are linear differential or integral differential operators with constant coefficients. If it is assumed that $x_s = X_s e^{i\omega t}$, Eqs (1.1) can be expressed by algebraic equations of the type:

$$A_o X_o - A_1 X_1 = f \ , \qquad (1.2)$$

$$-BX_{s-1} + AX_s - BX_{s+1} = 0 \quad (s = 1, 2, \ldots, n) \qquad (1.3)$$

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Construction of the Envelopes of the Resonance Characteristic for a Ladder Filter

$$-A_n X_n + A_{n+1} X_{n+1} = 0 \qquad (1.4)$$

where X_s are functions of ω which are obtained from the differential operators by substituting the differentiation by multiplication with $i\omega$ (and the integration by division with $i\omega$). Eqs (1.2)-(1.4) can be derived directly without preliminary differential equations. Eq (1.3) can be regarded as a finite-difference equation with respect to X_s. The solution of this is in the form of equation:

$$X_s = \alpha \operatorname{ch}(s\lambda) + \beta \operatorname{sh}(s\lambda) \qquad (2.1) .$$

This can also be written as Eq (2.2), where Δ is defined by Eq (2.3). The amplitude of the oscillations in the last element can easily be obtained from Eq (2.2)

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Construction of the Envelopes of the Resonance Characteristic for a Ladder Filter

and is expressed by:

$$H = \left| \frac{f \operatorname{sh} \lambda}{A_1 \Delta} \right| \qquad (2.5) \quad .$$

This can be regarded as the equation of the resonance characteristic. The resonance characteristic can also be described by Eq (2.17), where $\lambda = \mu + i\upsilon$, $\rho = \sigma + i\tau$. From Eq (2.17), it is seen that $H_1 \leqslant H \leqslant H_2$, where H_1 and H_2 are expressed by Eqs (3.1). From these it is seen that the resonance characteristic lies between two smooth curves expressed by Eqs (3.1). The first of these curves limits the resonant characteristic from below, while the second one limits it from above. The curves represented by Eqs (3.1) can be regarded as the envelopes. The amplitude of the resonance characteristic can be estimated by means

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Construction of the Envelopes of the Resonance Characteristic for a Ladder Filter

of the ratio H_1/H_2 ; this is defined by Eq (3.2). If the network of Figure 1 does not contain any resistive elements, the resonance curve can be represented by Eq (4.2), whose various parameters are defined by Eqs (4.3). If the network contains resistances only in the terminal elements, the formula for the resonance characteristic is expressed by Eq (5.1) and the envelopes are given by Eqs (5.2). If the terminal stages are dissipative but are identical (i.e. the network is symmetrical), Eq (5.1) can be written as Eq (7.7), while the envelopes are described by Eqs (7.9). The above formulae are employed to analyse the network shown in Figure 3 under the assumption that the system is symmetrical and contains resistances only in the terminal stages. In this case, the resonance characteristic

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Construction of the Envelopes of the Resonance Characteristic for a Ladder Filter

is expressed by Eq (8.6) and the envelopes are given by Eqs (8.7). It is seen that the upper envelope is represented by a horizontal straight line which means that the resonance amplitudes have the same magnitude. For the case of the filter shown in Figure 5, it consists of ℓ identical T-type elements and is terminated with resistances r ; the current amplitude at the output is given by Eq (8.9). The envelopes of the resonance curve are expressed by Eqs (8.10). For the filter consisting of ℓ identical Π-type elements (Figure 6) and terminated with resistances r , the current amplitude at the output is given by Eq (8.16). The envelopes are expressed by Eqs (8.20).
There are 6 figures and 15 Soviet references; 2 of the references are translated from English.

VC

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S/141/60/003/02/015/025
E192/E382

Construction of the Envelopes of the Resonance Characteristic for a Ladder Filter

ASSOCIATION: Leningradskiy politekhnicheskiy institut (Leningrad Polytechnical Institute)

SUBMITTED: November 5, 1959

Card 7/7

Vc

USSR / Cultivated Plants. Fodder Grasses and Root Crops. M-3

Abs Jour : Ref Zhur - Biologiya, No 2, 1959, No. 6319

Author : Gura, B.
Inst : Moscow Agricult. Inst. im. K. A. Timiryazev
Title : Contribution to the Problem of the Biology of Blooming of Foxtail Millet in Odesskaya Oblast'

Orig Pub : Sb. Stud. Nauchno-Issled. Rabot Mosk. s.-kh. akad. im. K. A. Timiryazev, 1957 (1958), vyp 7, 35-40

Abstract : It was established at the Selection Genetic Institute in 1955 that the maximum intensity of blooming of foxtail millet is observed when the relative humidity of the air remained under 70% and the temperature was 16 - 18°. The blooming intensity diminishes at 20°. The foxtail millet flowers stayed open for 1 - 4

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USSR / Cultivated Plants. Fodder Grasses and Root Crops. M-3

Abs Jour : Ref Zhur - Biologiya, No 2, 1959, No. 6319

hours, depending on exterior conditions. The duration of blooming is 15 - 16 days.

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GURA, B.L.

GURA, B.L.

Trenchless pipelaying with the aid of tractors and bulldozers.
Biul. stroi. tekh. 14 no.9:18 S '57. (MIRA 10:12)
(Pipelines)

GURA, D.V.

Gura, D.: "The search for methods of synthesizing racemic cocaine." Min Higher Education USSR. Moscow Inst of Fine Chemical Technology imeni M. V. Lomonosov. Chair of the Technology of Drugs and Perfumes. Moscow, 1956. (Dissertation for the Degree of Doctor in Chemical Science)

SO: Knizhnaya letopis', No 27, 1956. Moscow. Pages 94-109; 111.

5(3) SOV/153-58-2-13/30

AUTHORS: Bazilevskaya, G. I., Baynova, M. S., Gura, D. V., Dyumayev, K. M., Preobrazhenskiy, N. A.

TITLE: Synthesis of the Alkaloid Cocaine (Sintez alkaloida kokaina)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 2, pp 75-81 (USSR)

ABSTRACT: At the beginning, use, occurrence, and structural formula of cocaine are repeated. According to the structure theory, four racemic stereoisomers of cocaine are possible: racemic cocaine (Ref 3), racemic pseudo-cocaine (Ref 4), racemic allococaine (Ref 5), and racemic allo-pseudo-cocaine (Refs 5,6), as well as a corresponding number of optically active compounds. Various methods of synthesis for cocaine have been published (Refs 3,7,8-11). In the present paper, the synthesis according to the scheme (Page 76) is described. Pharmacological investigations in the Minskiy meditsinskiy institut (Minsk Medical Institute), carried out by Professor K. S. Snadurskiy and N. A. Iskarev, Graduate Student, on samples of the authors proved that racemic cocaine is not inferior to the natural levorotary cocaine regarding its local-anaesthetic properties (on the

cornea of the rabbit). But, on the other hand, it is less toxic. The investigations of the latter two scientists (Ref 14) led to the conclusion that it is frequently advisable to use racemic hydrochloric cocaine without cleaving it in antipodes. In the experimental section the synthesis of the following compounds, being cocaine constituents, is described: 1) 2,5--diethoxy-2,5-dihydrofuran (I), 2) 2,5-diethoxy-tetrahydrofuran (II), 3) di-potassium-salt of the monomethylester of acetone-dicarboxylic acid, 4) methyl-ester of the tropan-3-one-2--carboxylic acid (III), 5) the methyl-esters of racemic ecgonine (IV a) and of racemic pseudo-ecgonine (IV b), 6) racemic cocaine (base), 7) racemic hydrochloric cocaine. Conclusions: 1) In this paper the method of synthesis of the salt mentioned in 7) was elaborated. 2) The conditions of condensation of succin-dialdehyde with methylamine and with the salt mentioned in 3) to the compound (III) have been investigated. 3) A method of quantitative determination of compound (III) in the reaction mixture after the formation of the water-insoluble reineckate was suggested. 4) A stereo-oriented reduction of compound (III) to the methyl ester of racemic ecgonine was realized. There are 14 references. 4 of which are Soviet.

Synthesis of the Alkaloid Cocaine SOV/153-58-2-13/36

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii (Moscow Institute of Fine Chemical Technology)
Kafedra tekhnologii lekarstvennykh i dushistykh veshchestv (Chair of Technology of Drugs and Perfumes)

SUBMITTED: October 9, 1957

Card 3/3

79-28-4-55/60

AUTHORS: Bazilevskaya, G. I., Gura, D. V., Baynova, M. S., Dyumayev, K. M., Sarycheva, I. K., Preobrazhenskiy, N. A.

TITLE: Synthesis of Tropane-3-α-ol, Tropine (Sintez tropan-3-α-ola, tropina)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol.28, Nr 4, pp.1097-1105 (USSR)

ABSTRACT: The representatives of the tropane group (cocaine, atropine, tropine and also their natural and synthetic derivatives) play a considerable part among alkaloids. The presence of substituents in the pyrrolidine - piperidine grouping causes the possibility of different stereoisomeric forms of the tropane alkaloids. Thus, 4 configurations, and according to it 4 racemic isomers are known for cocaine. It was found that the compounds synthesized in 1956 allococaine, allo-pseudo-cocaine and the tropeines are derivatives of tropane-3-ole of tropine (formula I) while natural cocaine and pseudo-cocaine have the structure of pseudo-tropine (formula II) (Ref 1).

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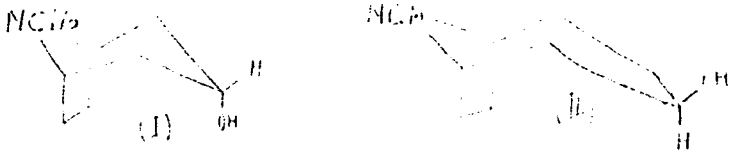
Synthesis of Tropane 3-Ol, Tropine



These two tropane-3-oles can be represented by reduction of the corresponding ketone tropinone. For the production of one or the other isomer not only the selection of the hydration agent but also the conditions of the carrying out of the reaction play an important part. In the present work the sterically directed reduction of tropinone to tropine carried out by the authors is described. Synthesis of tropinone was made by 3 methods described in technical publications: 1) Karrer and Alagil (Ref 6); 2) Willstätter, Wolfes and Mäder (Ref 8); 3) Gal, Simoniy and Tokar (Ref 10). In order to improve these 3 methods some modifications were made. Succinic dialdehyde which is necessary as starting product for the synthesis of tropinone according to the last two methods was represented by the authors according to 4 different methods which are all given in detail. On

Synthesis of Tropane-3-α-ol, Tropine

this occasion acetylene or ethyl acetal of the bromoaceto-aldehyde or succinic diethyl ester or furane served as starting product. The method of representation based on succinic diethyl ester was elaborated anew by the authors. The authors investigated a series of methods in order to find conditions for a stereo directed reduction of tropinone to tropine: reduction with sodium amalgan as well as electrolytic and catalytic hydration under different conditions. Tropane-3-oles with different content of stereoisomers are formed according to reaction conditions, but only in the presence of a nickel catalyst at 60 atmospheres pressure and 20° they succeeded in obtaining tropine without a content of pseudo-tropine. The thus synthesized tropine proved identical with that isolated from natural alkaloid atropine.

All synthesis reactions mentioned are described in detail in an extensive experimental part. There afe 29 references, 1 of which is Soviet.

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Card 4/4

GURA, G.

The combine puts out twenty thousand tons of coal. Sov.profsoiuzy 5 no.16-18 Ja '57. (MLRA 10:2)

1. Mashinist-mekhanik gornogo kombana "Donbass" shakhty imeni Kiseleva tresta "Chistyakovantratsit."
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Increasing the durabiligy of cardian needle bearings. Vest. mashinostr. 45 no.3:34-36 Mr '65. (MIRA 18:4)

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